LFU12 - Mideo LatentWorks SOP

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1. Scope

1.1. The Mideo LatentWorks application is a case management and digital imaging program analyst's use in casework, to ensure the integrity of digital fingerprint evidence and to document the examination process. Documentation is performed within the Mideo LatentWorks digital case record through digital image annotations and/or examination case notes and all findings are stored onto the system to create a digital case record. This data is supplemental to the physical case file jacket and LIMS documentation.

1.1.1. All latent prints of value and known exemplar records used in identification cases, will be saved into the Mideo LatentWorks case record as a case asset.

2. Background

2.1. To establish the practices for documenting the examination of evidence to conform to the requirements of the Department of Forensic Sciences (DFS) Forensic Science Laboratory (FSL) *Quality Assurance Manual*, the accreditation standards under ISO/IEC 17025:2017, and the supplemental standards set by the FSL's accrediting body.

3. Safety

3.1. Not applicable

4. Materials Required

4.1. Hardware

4.1.1. Epson Perfection V700/V800 Photo Scanner

4.2. Mideo® Systems LatentWorks Software
4.3. Adobe® Photoshop®
4.4. JusticeTrax LIMS

5. Standards and Controls

5.1. Not applicable

6. Calibration

6.1. Not applicable

7. Procedures

7.1. Pull a Case from LIMS JusticeTrax into Mideo Caseworks

7.1.1. Click on JusticeTrax Folder and then click on the Locator button 

7.1.2. Enter the DFS # (must match exact number in LIMS, including any zeros) and click the Service Request button

7.1.2.1. Ensure the “Selection Type” is Latent Fingerprint Unit

7.1.2.2. Click on Accept to generate the Mideo Caseworks folders

7.2. Import Images into the Latent Case Info folder

7.2.1. **Scan lift cards** into the Lift Cards-Photos folder using the following procedure:

7.2.1.1. While in the Lift Cards-Photos folder, select File, Capture, From TWAIN to scan and import image

7.2.1.1.1. Set scanner to Professional mode

7.2.1.1.2. Ensure TWAIN Capture Setting are set to “TIFF” for Save Type and Grayscale (8 bit) for Color Format, scan at 1200 ppi

7.2.1.2. Place the latent lift cards on the scanner

7.2.1.3. When the Epson scan window appears, select Preview

7.2.1.4. Adjust the scan area, click on Scan

7.2.1.5. Fill in the New File Import Box

7.2.1.6. Fill in the Basic Information

7.2.1.6.1. LIMS item number is entered in the Name area

7.2.1.6.2. Fill in mandatory field with the LIMS Item #

7.2.1.6.3. Click on Import

7.2.2. **Import latent photographs** into the Latent Cards-Photos folder using the following procedure:

7.2.2.1. While in the Latent Cards-Photos folder, right-click on the white space and click Import

7.2.2.2. Navigate to the DCS folder location to access the latent images associated with the case number.

7.2.2.3. Click on the applicable images and click Open

NOTE: If the images are too large to import correctly, a copy of the original TIFF file may be created and converted to JPG for import into Mideo, notification shall be made to the LFU Manager, Lead Scientist, or Technical Leader. A document describing the situation should be created and imported into the Lift Cards- Photos folder as well. The original evidentiary images shall remain in the DCS Working Folder on the network.

7.2.2.4. Fill in the following field sets:

7.2.2.4.1. Name in Basic Information – use the LIMS item number

7.2.2.4.2. Card #/Item # in the Custom Information – use the LIMS item number

7.2.2.4.3. Click on Import

7.3. **Select Individual impressions of value** by following these steps:

7.3.1. Open the latent lift or photo image, located in the Lift Cards-Photos folder, in the workspace by double-clicking on the image

7.3.2. Calibrate image:

7.3.2.1. For a scanned latent lift card – right click on the image and select Calibrate Scanned Image

7.3.2.2. For a photo – click on the Measurement in the left panel, click 1:1, draw a measurement, right-click on the drawn line, click Set-up Calibration and enter the Length of the drawn line.

NOTE: Calibrations will not be saved if the image is opened in Adobe Photoshop. Therefore, perform calibrations after processing if Adobe Photoshop is used to process an image.

7.3.3. On the left panel, click on the Selection tool to crop the image around the specific impression.

7.3.4. Click the crop box and draw a box around the applicable impression in the image.

7.3.5. Right click in the cropped box and select “Copy Region to”

7.3.5.1. A window will open – click and highlight “New Tab”, click “Accept” so the cropped impression will appear in the new tab

7.3.6. Select File, Save As and a window will open – change Save In location to the “Latents” (Impressions) folder

7.3.6.1. Change the Name in Basic Information to the sub-itemized impression number used in LIMS. The Card #/Item # fields maintain their original file name.

7.3.6.2. The Impression # field is added and should match the sub-itemized impression number used in LIMS. Click Save when finished.

7.3.7. Repeat above steps (starting at 7.3.1) for each individual impression of value in the original image of the latent lift or photo.

7.3.8. Mark orientation of impression:

7.3.8.1. If applicable, use the red arrows  at the top right to rotate the card to its correct orientation

7.3.8.2. Use Charting Tools on the left panel to select the Print Orientation Tool or Palm Orientation Tool  depending on the impression type. Mark the orientation of latent impression.

7.3.8.3. Image can be enlarged by dragging red corner dots. Top red dot will rotate image.

7.4. **Perform processing on images**, if applicable:

7.4.1. Go to Image, and click Filters to apply appropriate processing techniques

7.4.1.1. To remove or undo applied filters, navigate to the Images Panel (go to the View toolbar to ensure it is visible) on the left side of the screen, highlight the filter you want removed and click Remove.

7.4.1.2. Brightness, contrast and transparency can also be adjusted by changing the levels in the Images panel on the left side of the workspace.

NOTE: Images processed in Mideo will not open with saved enhancements in Adobe Photoshop. Therefore, if the analyst wishes to process an image in Adobe Photoshop, they should start their processing in that program versus Mideo.

7.4.2. If Adobe Photoshop is utilized to process an image while in Mideo, use the following procedure to ensure changes are tracked appropriately.

7.4.2.1. To open in Adobe Photoshop, right click on image, while in the Visual Directory, and select Open, Open with Photoshop

7.4.2.1.1. Follow LFU11 SOP for processing of images in Adobe Photoshop.

7.4.2.2. To return to Caseworks from Photoshop, select File, right click, scroll down to Automate, Return to Caseworks.

7.5. **Make annotations on impressions by using the GYRO method**:

7.5.1. Before annotating your image, select the Grouping tool to create layers and group markings to be used during comparison.

7.5.1.1. In Graphic Groups, click the plus sign, label the groups Green, Yellow, Red and Orange. Begin marking level 2 information on the latent using the GYRO system and these steps:

7.5.1.1.1. Select Complex Mark-up and click the appropriate letter for each color – in the top toolbar select Create Multiple of the Current Graphic  to mark multiple of the same color and use the zoom button to enlarge image, if needed

7.5.1.1.1.1. Green – high level of confidence in feature

7.5.1.1.1.2. Yellow – medium level of confidence in feature

7.5.1.1.1.3. Red – uncertainty regarding feature

7.5.1.1.1.4. Orange – features not considered in Analysis phase – this will be used during the comparison phase

7.5.1.1.2. To enlarge the size of the mark-ups, click on mark-up, navigate to the Properties panel on the left side of the workspace and scroll down to Point Properties. Increase the Size of the point.

7.5.1.1.3. Save and close the workspace.

7.6. Import images into the Exemplars folder

7.6.1. To import scanned exemplars into the system, follow the same procedure outlined in 7.2.1 ensuring they are in the Exemplar folder instead of the Latent Lift folder. Exemplars may be scanned at a resolution of 600ppi and jpg format.

7.6.2. To import ten-print and palm print images directly from the AFIS, copy the NIST file for the applicable known print and paste into the Mideo-AFIS shared drive.

7.6.2.1. Right-click on the screen and click Import

7.6.2.2. Navigate to the Mideo-AFIS shared drive location to access the exemplar images associated with the case number.

7.6.2.3. Click on the correct files and click open

7.7. **Document the exemplar evidence** by filling in the following field-sets:

7.7.1. Name in the Basic Information – First name followed by last name

7.7.2. All required custom information, including Name and Identification #

7.8. **Open the Comparison Workspace to perform any comparisons**:

7.8.1. Go to File, New, and Comparison Workspace

7.8.2. Navigate to the Latents folder, open applicable image and drag the latent impression into the left panel of the workspace

7.8.3. Navigate to Exemplar folder, open the applicable image and drag the exemplar into the right panel of the workspace

7.8.4. Ensure the impression number is above the latent image.

7.8.4.1. If not, double-click in the text box above the impression and edit the name to change it from the item # to the impression #

7.8.5. On the View menu of the comparison workspace, ensure the Zoom panel is checked and click the known print box to display the image in the "current zoom".

7.8.6. Search through the exemplar, by moving the red box with your mouse, to compare the latent impression to each known

7.8.6.1. To perform comparison without GYRO markings visible on the latent, click the paint bucket next to each group in the Graphic Groups to remove annotations

7.8.6.2. Use zoom button  in top toolbar to enlarge images or the mouse can be used to zoom and right click to move focus.

7.8.7. For identifications, annotate the points marked in the latent that are seen in the known exemplar by using the GYRO method outlined in 7.6. Use same color as points marked in the analysis phase, but use orange for any new minutiae points noted in the known and corresponding to the unknown latent.

7.8.7.1. Ensure the Grouping tool is highlighted when marking points in known

7.8.7.2. Save comparison workspace image in Comparison Data folder by using the File - Save As key and name the file (Basic Info – Name) with the exemplar name and finger # for all identifications. Example – John Smith left ring #9

7.8.7.2.1. Ensure the “Save in” field is set at comparison data folder and click “Save”.

7.8.7.2.2. Comparison annotations may also be marked on other types of conclusions at the discretion of the assigned analyst.

7.9. Printing Photos from Mideo

7.9.1. While in the visual directory, click on the applicable image.

7.9.1.1. Hold the Control key and click multiple images to print multiple photos.

7.9.2. Go to File, Print or select the printer icon 

7.9.1.2. In the window, from the “Select a report” drop-down, select “Image Worksheet” and then the applicable display type.

7.9.1.2.1. Typically, Single Image Print 4x6 will be selected.

7.9.1.3. Scroll down in the window and click “Print Calibrated Images to Scale” and select “Print 1:1”.

7.9.1.3.1. Ensure the other options are not selected.

7.9.1.4. Click Print and select the applicable photo printer.

7.10. Generating Mideo worksheets

7.10.1. Right-click on the Latent Case Info folder for the applicable case in the left-side panel and click Print Summary

7.10.1.1. Select (highlight) applicable case jacket worksheets –DC Summary Worksheet

7.10.1.2. In bottom part of window, scroll down, click “Print Directly to PDF” and ensure “Save to Database” is checked and click “Print”.

7.10.1.3. In the “Select the PDF Creation Options” box, name the file “Mideo Summary” and keep the PDF Output File Size at Small. Click Continue. The report will generate in the Printed Reports section of the Mideo screen.

7.11. Export worksheets to LIMS

7.11.1. Navigate to the Latent Case Info folder for the applicable case

7.11.2. Right click on the PDF report below the Printed Reports section and select “Export” then “To LIMS”.

7.11.2.1. The worksheet should then appear in LIMS Imaging, under the Request sub-folder. It will appear under the Evidence Processing request or the Latent Analysis request folder, depending on which request the data was entered into.

NOTE: Since the Request folder is locked down after the LIMS request is in the “draft complete” milestone, the worksheets must be exported before the analyst moves the milestone to “draft complete”. If issues are found during the review process and changes need to be made to the worksheets, the milestones will have to be rolled back and the worksheets will need re-exported to LIMS.

8. Sampling

8.1. Not applicable

9. Calculations

9.1. Not applicable

10. Uncertainty of Measurement

10.1. Not applicable

11. Limitations

11.1. Not applicable

12. Documentation

12.1. Mideo Worksheets/reports

13. References

13.1. Forensic Science Laboratory Quality Assurance Manual (Current Version)
13.2. FSL Departmental Operations Manuals (Current Versions)
13.3. FSL Laboratory Operations Manuals (Current Versions)